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## AN EARLY PLEISTOCENE MACROPOD FROM JANDAKOT, WESTERN AUSTRALIA

By JANE BALME, Western Australian Museum, Francis Street, Perth, 6000.

Two tooth fragments which, when fitted together formed a complete premolar tooth (Western Australian Museum catalogue number 79.2.13), were found by V. A. Ryland, Department of Palaeontology, Western Australian Museum (W.A.M.), in material recovered from Paulik's bore, Jandakot. One fragment of the tooth was found in a sediment sample from 25.0 m below the top of the bore and the other from the next sample up the bore at 24.7 m. The two pieces were fitted together and registered as from 24.7 m, being the first occurrence of the specimen during drilling. This position lay 3.2 m below Australian Height Datum (m.s.l.).

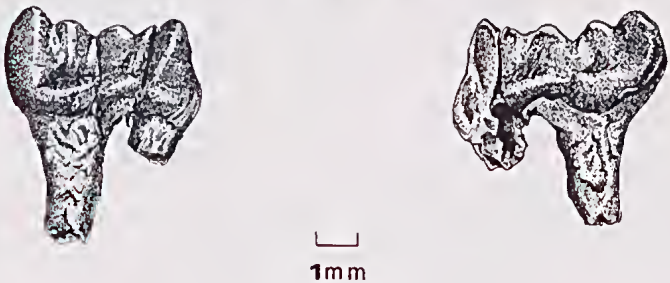


Fig. 1.—Premolar tooth from Paulik's bore, Jandakot, Western Australia. A. lingual view. B. buccal view.

Paulik's bore is situated at the eastern end of lot 41, Semple Road, Jandakot (latitude 32°6'47" S, longitude 115°50'39" E), which is on the Swan Coastal Plain about 20 km south of Perth. The bore was drilled

with sludge pump and percussion drill during 1968 by Mr. J. G. Hastings. Mr. G. W. Kendrick from the Department of Palaeontology (W.A.M.) attended the site when the bore was drilled to collect and record depth data.

The sequence in Paulik's bore, from the top down, consisted of the following units.

surface—22 m: Grey to brown nonfossiliferous quartz sand identified as Bassendean Sand (Playford and Low, 1972).

22 m—c.22.5 m: Brown silt with some dark grey carbonaceous sand. This transitional sand silt sequence contained carbon and other plant remains, fragmentary bone and shells of freshwater snails. The unit is interpreted as deposition in and near fresh water swamp.

c.22.5 m—42.7 m: Richly fossiliferous, grey, quartz arenite with some siltstone, calcrete, algal and other limestone. This sequence is mostly marine but contains several thin nonmarine units.

Major unconformity.

42.7 m: Black shale of the Cretaceous Osborne formation.

A marked concentration of bone fragments occurred in the bore sediments from 22.4 to 26.5 m below surface. The uppermost bone found was at the contact of the silty transitional unit and the marine beds (22.4 m). Most of the bone was excavated from below this contact but material can work itself down the steel casing and the recovery depths may be greater than the original position of the material before drilling.

Both of the premolar fragments were found in the uppermost marine bed which is characterised by medium grained, grey, quartzose carbonate sand. On the basis of the molluscs present in the marine sequence, G. W. Kendrick considers that the sediments probably correlate with the Werrikooian stage of south-east Australia (Singleton, McDougall and Mallet, 1976) and are likely to be early Pleistocene. The Bassendean Sand, which overlies the bone fragments, is middle Pleistocene (Playford, Cockbain and Low, 1976). Thus on present evidence the tooth can be considered as early Pleistocene or perhaps a little younger.

The premolar is macropodid in form—its maximum length is 4.5 mm and it is 2.1 mm at its widest point. It has been compared to all macropods from the modern and fossil collections of the Western Australian Museum without a successful match. Dr. M. Archer of the Department of Zoology, University of New South Wales has compared it with specimens from his extensive collection of Tertiary and Quaternary Australian and Papuan extinct species, and modern New Guinean taxa, without success.

The tooth, however, is very similar in form to a late Pleistocene permanent premolar of a *Potorous* sp. collected from Nannup Cave, south-western Australia (W.A.M. No. 69.3.373). The major difference between the two teeth is size, the Jandakot tooth being considerably smaller than the Nannup Cave tooth (maximum length = 4.5 mm, maximum width = 2.1 mm). Until more material from the Jandakot animal is found, assigning the tooth to species is premature.

This tooth represents the oldest known mammal so far recorded from Western Australia and its discovery is an illustration of the potential of bore sediments if they are meticulously examined.

## ACKNOWLEDGEMENTS

I would like to thank G. W. Kendrick for drawing my attention to the bone fragments, for information about the sequence at Paulik's bore and for reading and commenting on a draft of this paper. M. Hern drew the figure.

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## THE POTOROO TRUFFLE *(POTOROMYCES LOCULATUS)*

By ROGER N. HILTON,
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The fungus-feeding habit of small and not-so-small mammals has long fascinated naturalists. Only recently and on the local scene has the ecological significance of this habit been worked out, for the Tammar and the Bettong, by Dr. Per Christiansen. (See *Forests Department Bulletin* No. 89, in press). There have been parallel discoveries in North America by Dr. Jim Trappe. The arts of the human truffle hunter, often aided by dog or pig, have been described many times.

That these fungi have a significance for animals quite apart from man has long been indicated by the name Hart or Stag Truffle, in Latin *Elaphomyces cervinus* (in Latin deer is *cervinus*, in Greek *elaphos*). An excellent illustration of this fungus is Figure 119 in Gäumann and Dodge's *Comparative Morphology of the Fungi* (1928). A later version of this book, published in 1952, says, 'The similarity in appearance of the fructifications of *Elaphomyces cervinus* to those of the true truffles, except in size, is the basis of their common name, stag truffle'. But nearer the truth are the words of the old pharmacopoeia quoted (coyly, in Latin) by Ramsbottom on page 272 of his *Mushrooms and Toadstools: 'Fungus cervinus', 'Tubera cervina'* and similar names so-called because they are found in places where the deer exercise their libido. The deer eat the truffles and so, by inexorable Mediaeval logic, they must be of use to man in the exercise of *his* libido.

Ferdinand von Mueller was aware of this connection with animals when he roamed the Western Australian forests a century ago, and when he was presented with the fragments of an underground fungus with a strong aromatic/garlic odour, recognised it for what it was: an Australian equivalent of the Stag Truffle. He sent some with a covering letter to his correspondent Mordecai Cubbit Cooke. Cooke was a man who could turn into exquisite paintings the terse Latin descriptions of fungi that he had not even seen and who wrote the first and only fungus flora of a continent he had not even visited—Australia. The letter lies with the specimens in the herbarium of the Royal Botanic Gardens at Kew and is reproduced here exactly as it was written in von Mueller's only slightly imperfect English.

19/9/1881

May I draw your particular attention to the enclosed fung, dear Dr Cooke, which seems to me to constitute a new genus, nearest to Elaphomyces. I have divided the few specimens so as to supply you, the Rev. M. J. Berkeley & the Rev. C. Kalchbrenner. The loculation, by which the peripheric sporiferous space is interrupted, seems remarkable, so the large solid central mass which is granular under the microscope. The closely packed spreading MILLIONS of threads, far more delicate than those of the finest spider-webs, are—as you will notice—beset with egg shaped spores in uncountable vastness of number.

The name is derived from Potorous, that given by Desmarest to the Kangaroo Rats (from the aboriginal appellation "Potoroo"), these animals feasting on this fung, scraping it up from its concealment 3 or 4 inches underground. It came from a place near the coast between Point d'Entrecasteaux & Point Nuyts, and was sent me by Mr. Th. Muir, who like all other correspondents of mine I had repeatedly asked to secure any fungs he might meet with.

As Elaphomyces indicates a sort of truffle, of which the stags are fond, I hope you will think the allusion I made a happy one.

Of course, I may be quite wrong in this; for I never had time to study fungs methodically, my energies having . . .

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